

PAPER FOR ACU CONFERENCE

THE DEVELOPMENT OF POSTGRADUATE EDUCATION
IN DEVELOPING COMMONWEALTH COUNTRIES

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I. Introduction

This paper is a short presentation of the main features along which postgraduate education (pge) could be expanded in the developing Commonwealth countries (dcc).

I.2 Neither the advanced Commonwealth countries nor other Commonwealth countries where pge has been established for some time are the object of this paper. It is assumed that pge will only be considered when undergraduate education has been well established. The term pge includes advanced research work which might be carried out in a University.

I.3 In other words, this paper is mainly concerned with institutions in dcc where universities have established undergraduate education and as yet do not have separate institutional arrangements for pge. It is understood that in most cases higher degrees in such universities are obtained by successful presentation of a thesis which is the result of research work supervised by academic staff who would normally be mainly concerned with teaching undergraduates. The institution responsible for Pge will be termed the postgraduate centre (PGC).

I.4 Higher education in the dcc is normally characterised by the following features:-

I.4.a (a) Relatively large numbers of undergraduates with student/staff ratios of 15:1 or worse in the non-science stream faculties and 12:1 or better in the science stream faculties. Academic staff are mainly involved in teaching activities and have relatively little time or adequate facilities to carry out advanced research on a sustained basis. Research is seen to be a supplementary (NE not complementary) activity and is directed more towards publication which is taken by staff and by the university authorities concerned as an essential pre-requisite for promotion.

I.4.b (b) Funds for research work are limited and are a part of departmental budgets which are managed by departmental heads according to their own wisdom. Priorities of the Government (the main source of funds in the university budget), the Council, Deans and Heads may vary from year to year and from faculty to faculty. From the individual researcher's point of view, funds are severely limited and uncertain from year to year. There is

little assurance of continuity. There is not much monitoring of the results of such research other than a negative effect, namely, that if publications are lacking, staff may be passed over in promotion exercises. Staff receive little "direction" as to the area where research could be useful to national development.

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[As a minor digression it may be noted that the University of Malaya has a special vote (F) for which funds are directly provided to staff whose research projects are accepted by the Council. This ensures financial adequacy and continuity. A system of monitoring and regular assessment also ensures that funds are spent for the original purpose. Applicants for grants receive some guidance as to the relevance of their projects during the preparatory stages of their projects.]

I.4.c (c) There is a perceptible lack of inter-disciplinary cooperation. There is little cooperation between departments, faculties or between universities as well as national research institutes or other public authorities which have staff and facilities that may be useful for the pursuit of advanced research. Thus, most units operate on a relatively small scale. There are few occasions for intellectual interaction between researchers in complementary or other disciplines. The economies of scale cannot be taken advantage of in the purchase of highly specialised and expensive equipment, the construction of special purpose buildings or the bringing in of specialised foreign talents.

I.5 These are some of the more significant features of universities in the dcc which render the establishment of pge difficult. One consequence is that graduate staff have to go overseas for their higher degrees. It is unreservedly accepted that a proportion of local university staff should proceed overseas to obtain higher degrees in order to obtain new experience and to have the opportunity of working with first class scholars of international repute and to observe other university systems in different national environments. However, it would be better if the majority of postgraduate students were to be produced in the home country.

Reasons for pge

II.6 There are at least five good reasons for establishing pge in the dcc:-

II.6.a (a) Lower cost of postgraduate studies. It costs three to five times as much (including salary, allowances and travelling costs -bearing in mind that the trainee will probably be married) to send a postgraduate student overseas to countries like United States, Canada or Scandinavia.

- II.6.b (b) There is an additional cost advantage that accrues. As the number of postgraduate students increases in a PGC the cost per student should fall. The demand from the private and public sectors is likely to increase rapidly as the pace of economic development increases and the rate of industrialization grows. Indeed it may not be possible to meet the absolute demand for graduates with higher degrees if a dcc is wholly dependent on overseas training facilities.
- II.6.c (c) Greater academic relevance. While it may be true that basic postgraduate teaching and research in such areas as the pure sciences or mathematics is the same wherever the postgraduate institution may be located, in many other disciplines local conditions are of considerable significance. Typical examples are economics, sociology, arts, agriculture, etc. It is not only the content of teaching or the topics that would be the subjects of advanced research for masters dissertations or doctoral theses. Even the view point of the teacher or supervisor may not be so 'relevant' to conditions in the country from which the Postgraduate student comes.
- II.6.d (d) Avoiding alienation. It often happens that after several years as a postgraduate student living overseas, the person concerned does not really want to return home. He longs to continue the 'liberated' life-style common to young and middle-aged intellectuals in American or European society. When he does return he brings new attitudes (including sometimes new modes of speech) which alienate him from local intellectuals or students. He often wants to adopt methods of research that are capital intensive or ways of doing things that tend to make him a misfit in the university that originally spent so much to send him overseas for an advanced education. Furthermore, postgraduate students may not be able to continue the research work they have done overseas after they return for lack of resources or lack of relevance.
- II.6.e (e) Assisting national development. The key element in pge is advanced research. The need for advanced research on a wide range of the problems involved in national development is great. International agencies, foreign foundations and consultants from private firms are engaged to undertake such research. They are ephemeral and relatively expensive, both in dollars and in the consequences of their meddling in national affairs, etc. It would be better for such research to be undertaken by a local institution where there would be a continuity of work, accumulation of knowledge, and development of skills, at probably lower costs. This is not to deny the value of foreign experts. They should only be used when there is no suitable local talent and they should always be associated with appropriate local counterparts.

A separate PGC

- III.7 In a dcc the need for a separate institution (i.e. PGC) adequately supported by the Government arises when:-

- III.7.a (a) Undergraduate studies are well established. By this is meant:
- (i) A large proportion of courses are taught by nationals and non-nationals are only brought in for their special competence or experience.
 - (ii) The use of the National language as the medium of instruction is widespread in the University.
 - (iii) Local graduates are accepted as postgraduate students in reputable universities overseas.
 - (iv) Existing departments are supervising considerable numbers of Masters and Ph.D candidates and these degrees are well accepted overseas.
- III.7.b (b) The establishment of new universities and the expansion of undergraduate populations in the existing universities is being implemented by Governments.
- III.7.c (c) There are research institutions and public authorities which require considerable numbers of scientists and professional workers with postgraduate experience and these institutions are actually sending considerable numbers of local graduates overseas for their postgraduate education.
- III.7.d (d) There is a clear awareness for a need for advanced research to solve a number of problems of national significance and relatively large sums are being spent on payments to foreign consultants to undertake such work.
- III.8 In such situations, postgraduate facilities should be established inside the nation. In view of the relatively high cost and the need for adequate financing, initially, only one such centre (PGC) may be feasible. However, to mobilize all available talents in the country, the PGC should be organized to do this without unduly diverting such talents from their current duties. The PGC should be linked to the international network of institutes of advanced research and postgraduate teaching.

Need for separateness

- IV.9 In answer to the question, "why not expand the existing departments rather than create a separate new institution?" the following points are relevant:-
- IV.9.a (a) Existing departments are primarily oriented towards undergraduate teaching while research work is a secondary feature. It would be time consuming and expensive in many ways to attempt to reorientate such departments. In any event, the reorientation may affect the quality of undergraduate teaching. Furthermore, existing departments/faculties are subject to politics and power-structure systems which have evolved with the University and are often swayed by relatively large numbers of young

staff whose influence is mainly derived from their numbers. The Heads derive their power from the authority of their appointments. The PGC would aim to have a fairly large proportion of its personnel at the middle-level, i.e. not so old as the typical Head, yet older than recently appointed young lecturers with their fresh doctorates. In other words, they would be persons who would have a doctorate and three to five years of teaching and research experience. They would be innovative, frontier-thinking types rather than administration-orientated individuals. In any case, the existing undergraduate teaching staff who are willing, able and qualified to do so, may join the PGC if they are prepared to undertake acceptable studies.

- IV.9.b (b) The existing departments tend to resist being driven into interdisciplinary collaboration. Their senior members are often typified as "empire-building" or "fort-holding" operators. The PGC will be interdisciplinary without departments from the very beginning.
- IV.9.c (c) Heads of departments are appointed for their ability to administer undergraduate teaching. Departments are not geared to administer large-scale research projects.
- IV.9.d (d) University Councils and financial authorities tend to see departmental expenditures in terms of undergraduate teaching norms with research-for-promotion as side activities. They would require intolerable reorientation. The PGC will start with a new style of decision-making procedures suited to its "think-research" point of view.

Organization of PGC

V.10 For the above reasons, it is suggested that the establishment of a PGC should be purposely planned ab initio along new lines suggested below:-

- V.10.a (a) One university should be selected and a separate institution, namely, the PGC should be established there. This institution should have its own authority to deal with all relevant academic, administrative and financial affairs. In the initial phases of their national education development, few countries will be able to afford more than one PGC per country. Indeed, some countries may try to share in the establishment of a PGC.
- V.10.b (b) The PGC will have direct links with all staff in the faculties in the university where it is established and in any other universities as well as research institutes and professional bodies in the country. These links will include the possibility of staff holding appointments in the PGC in addition to their own appointments or positions (i.e. double appointments). There should also be possibility of access to special equipment or facilities under the control of the other institutions.

- V.10.c (c) The PGC will have links with foreign universities and research institutes as well as with international organizations. These links will include the possibility of exchange of staff, training of staff and access to research facilities on a mutual basis.
- V.10.d (d) The PGC will formulate and seek ratification of international agreements to enable its staff to do advanced work in foreign universities and to bring foreign specialists in as consultants or participants in joint research projects. It may have agreements with consortia of universities in particular countries. Foreign governments and foundations may donate grants for exchange schemes.
- V.10.e (e) The PGC will be organized on an interdisciplinary basis, i.e. there will be no departments, divisions, faculties or schools or any administrative units based on particular academic disciplines. All staff will be regarded as staff of the whole centre.
- V.10.f (f) All research will be organized around "Projects". (See para VII below.) Each project will have a research team led by a project Chairman. The project chairman will be responsible for administering the funds, etc. allocated to the project as a whole or to specific studies and he is answerable to the Director.
- V.13 The administration of the PGC will be organized as follows:-
- V.13.a (a) There will be an administrative core under the Director who will be responsible for all central services, financing, etc. He will be assisted by Deputy Directors, Registrar, Finance Officer, etc.
- V.13.b (b) The Director will be responsible to:-
- (i) An Administrative Council which will delegate to him a large measure of responsibility for appointments, finance, etc. This Council will meet frequently to enable decision making to be as rapid as possible. The Administrative Council will have adequate powers delegated to it by the Council of the University.
 - (ii) An Academic Board will deal exclusively with such academic matters as admissions, curriculum, examinations, etc. The Academic Board will have delegated to it sufficient authority by the Senate of the University.

Teaching - Masters level

- VI.14 All postgraduate teaching, most of which would be concerned with the provision of courses at the Masters degree level, will be dealt with by a network of course committees, each of which would be headed by a Convener appointed by the Academic Board. These Masters level courses would include:-
- (i) Core courses which all students will be required to take, e.g. philosophy, basic research methodology, languages, etc.

- (ii) Compulsory courses at an advanced level in the student's main area of interest.
- (iii) Optional courses from approved lists.

Projects

VII.15 The project concept is the basis of research organization in the PGC which will have a master plan for all the research it intends to be concerned with. This master plan will be divided into a number of projects, each of which will constitute a broad area of research that covers a set of inter-related problems of considerable significance from the point of view of national development. Each project will be sub-divided into a number of studies. Each study will be a clearly defined aspect of a project that can be studied or investigated by a researcher or a group of researchers.

For example, two projects in Malaysia could be:-

- (I) Evaluation and development of renewable biological resources.
- (II) Linguistic studies in relation to the National Language.

Although the number of studies that can be undertaken within the framework of each of the above projects is quite large, a few examples are given below:-

Project I: Evaluation and development of renewable biological resources.

- Study (a) Exploitation of economically important plants - propagation, growth and cropping systems.
- Study (b) Recovery of waste lands for renewable resource production.
- Study (c) Technology of storage and preservation of biological products in the tropics.
- Study (d) Forage development, feed utilization and adaptation of animal breeds suited for tropics.
- Study (e) Selection, adaptation and rearing systems for improvement of inland fishery.
- Study (f) Biological manipulation for soil fertility, yield and biological control of pests.
- Study (g) Recycling of wastes for use in animal and plant nutrition and production of food such as mushrooms.

Project II: Linguistic Studies in relation to the National Language.

- Study (a) Contrastive studies (contrasting Malay with Chinese dialects, Tamil, etc.)
- Study (b) Sociolinguistic studies (problems of Malay as a national and regional language).
- Study (c) An examination of the problems of terminology and standardization.
- Study (d) The teaching of Malay and English as a first and second language.
- Study (e) Isolated linguistic studies of Malay (grammar, dialects, lexicography, comparative and historical studies.)

VII.16 Among the criteria to be adopted in assessing the proposals for selection and approval as projects are the following:-

- (a) They should be multi or interdisciplinary.
- (b) They should be problem or need-oriented.
- (c) They should have growth potential.
- (d) They should have potential for collaboration with other national or international institutions.
- (e) They should have research training potential.
- (f) They should help to build up consultancy competence.

VII.17 For administrative purposes projects could be categorised as follows:-

- (a) Their life expectancy, that is, long-term, medium-term or short-term.
- (b) Their orientation, that is, national or regional.
- (c) Their size in cost.
- (d) Their staff requirements in terms of expertise.

VII.18 The final list of projects will be approved by the Administrative Board. Projects will be reviewed every five years. At the review, projects of lesser significance may be phased out and new projects instituted.

VII.19 The organization of projects will be the responsibility of a project chairman who is appointed by the Director and is assisted by a project team that will include all the researchers within the orbit of the respective project. Each project would have its own budget approved for a number of years depending on the nature of the studies that constitute the project.

- VII.20 Studies will be approved by the project chairman after discussion with the project team. After consulting the Academic Board, the Director may intervene if he considers that certain studies of lesser significance are about to be adopted. In any dispute the final authority would lie with the Administrative Board.
- VII.21 A project team would consist of the following persons working or studying in the PGC:-
- (a) Full time researchers.
 - (b) Candidates for higher degrees.
 - (c) Consultants and visiting staff.
 - (d) Research-oriented staff in faculties or any other institutions of the university where the PGC is located.
 - (e) Research oriented staff in other universities, inside or outside the country.
- VII.22 Two questions may be answered to illustrate how this project type of research may be organized. Firstly, it may be asked, "How does a study originate?" and secondly, "How does a person intending to work in the centre get himself accepted?"
- VII.23 The applicant may be a candidate for a doctorate and as such his intended study will be a topic that can be completed and presented as a doctoral thesis within the stipulated period. If the candidate is carrying out a study which is a subject of a masters dissertation besides his course work, then he will probably be given the choice of a suitable study topic from a list prepared by the project chairman and his team for the specific purpose for assisting Masters candidates.
- VII.24 The researcher who intends to carry out a study on a full-time basis would expect to be adequately remunerated by the PGC. Presumably, the Centre would have the necessary funds either from its main budget or from general or specific grants or from contracts.
- VII.25 The part-time researcher, who may hold a teaching post in a faculty in the same university or in another university, would expect to be allowed to carry out his research work as part of his normal academic duties (subject to approval by his department/faculty/university which should be generous.) He could expect financial assistance besides the use of the facilities of the PGC (e.g. laboratories, field facilities, transportation, special library services, etc. and travelling assistance inside or outside the country.)

VII.26 Full-time and part-time researchers who are not registered for higher degrees, would be doing such research studies because they intend to explore particular subjects, to make publications, to advance knowledge and to improve their talents and their material and academic prospects.

VII.27 These are some examples of persons who could be accepted as researchers in the PGC. Briefly, they could be divided into, degree seekers and professional/part-time researchers. They would be attracted to the PGC because of its research-oriented atmosphere, the academic milieu and the excellence of its facilities for carrying out specific types of research and for preparing publications.

VII.28 Since studies originate within the framework of projects, it is necessary to understand how projects are determined. After it has been initiated, a project is reviewed at five yearly intervals. At this review the project is either continued or replaced by another project. During the period of its existence any aspect of the project that satisfies the criteria mentioned in para VII.15 may be accepted as a study. The project chairman should be conscious of the full scope of his project. He is the person most likely to be aware of the aspects of problems under his project that have not yet been made the subject of studies. In any case, when a project is first proposed, besides other reasons for its justification, it will contain a list of possible studies that should be made. As the members of a project team carry out their respective studies, they will realize the need for certain related areas to be studied. As the end-users of the research results of the project proceed with their respective tasks they will realize more clearly the need for certain additional studies to be made. Persons who are indirectly interested in particular projects may suggest certain studies that they would like to undertake individually or jointly with other researchers in the hope of getting financial support for their work from the PGC. These are some examples of how studies can originate. There should be great flexibility in the submission of proposals and their acceptance. In this paragraph the concern is with the genesis of studies and not with the administrative or financial problems that may be involved in choosing between studies. We may sum up in the following words, a study originates in response to a felt need for a problem to be solved on the basis of advanced research or it could be the result of a fresh proposal by an outstanding researcher. This last statement partly answers the second question. An intelligent researcher seeking admission to the PGC will try to get himself accepted by indicating how he can carry out a study which is of significance within the framework of a given project.

Finance

VIII.29 An essential corollary to the acceptance and establishment of the PGC is that it should become a national centre of excellence. All the projects should be of national significance and related to national development. A vital pre-requisite for excellence is financial adequacy. Therefore the absolute word regarding finance is "adequate". The principle has to be accepted that for the PGC, finance must be adequate. Naturally, universities and PGC, like human beings have unlimited desires. However we are all subject to the economic law of scarcity (i.e. the management of limited resources that have alternative uses for the achievement of specific goals).

Allegations of grandiosity must be repudiated once projects have been selected. The researchers concerned must be given enough resources and time to complete their tasks properly.

VIII.30 Where the Government provides the funds, it must be convinced that it will get results that are commensurate with its investment. However, an effective PGC should not depend entirely on the Government for its finance. The main finances for administration and general operations as well as the cost of teaching the masters level courses should be provided by the Government. Projects or studies should derive financial support from public and private sectors where research or consultation of high quality is required. Foundations and international agencies may support projects or studies. Private individuals may donate or make bequests to the PGC.

VIII.31 The PGC's authorities and the Director must learn to balance financial adequacy with academic excellence.

Conclusion

IX.32 Universities in dcc are on threshold of pge. In the emerging countries that have both the need for pge as well as the underlying potential framework for the establishment of their own PGC, environmental factors such as political, social, economic and cultural conditions are of critical significance. While autonomy is often seen in the western context as a characteristic of the relationship between the university and the state, in these special circumstances it may also have to characterise the relationship between the PGC and a range of institutions that constitute the existing system of higher education and advanced research. Appropriate links with local and foreign academic institutions are also important.

There appears to be scant similarity between the corridors of power that may link Oxbridge with Westminster and the backlanes that join the university to the Government in a dcc. If a PGC is to justify the kind of organization described above, then it will have to be pragmatic, innovative and clearly appear to be serving the national interest.